F–9076

Sub. Code
7BMC4C1

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Fourth Semester

Microbiology and Clinical Lab Technology

MOLECULAR BIOLOGY AND MICROBIAL GENETICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. B DNA
2. Griffth effect
3. Photoreactivation
4. Tautomeric shift
5. Replication fork
6. SSB protein
7. Reverse transcriptase
8. Pribnow box
9. Introns
10. Repressor

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Describe the structure of Watson and Crick model of DNA.

Or

(b) Explain various types and forms of DNA.

12. (a) Write short notes on SOS repair

Or

(b) Explain physical mutation.

13. (a) Enlist the enzymes involved in DNA replication.

Or

(b) Discuss the exprimental evidence for semi conservative DNA replication.

14. (a) Differentiate transcription is prokaryotes from Eukaryotes.

Or

(b) Give an account on termination of translation in prokaryotes.

15. (a) How does an Operon regulate gene Expression?

Or

(b) How does Positive gene regulation work?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on structure and types of RNA.

17. Explain chromosomal Mutation.

18. Give brief account on DNA replication in becteria.

19. Explain the steps of protein synthesis in prokaryotes.

20. Elaborate Trp operon.

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F–9077	Sub. Code
	7BMC6C1

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Microbiology And Clinical Lab technology

BIO INSTRUMENTATION AND DIAGNOSTICS

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define Normality
2. PPM
3. Ultraviolet radiation
4. Crystallography
5. TLC
6. Name two adsorbents used in adsorption column chromatography
7. Define centrifugation
8. What is supernatent?
9. Define Histopathology
10. ECG

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) How to perform serial dilution technique?

Or

(b) Explain the preparation of Methylene blue dye.

12. (a) Explain the principle of Spectroscopy.

Or

(b) Describe the principle and uses of X-Ray crystallography.

13. (a) Describe the principle and uses of Ion exchange chromatography.

Or

(b) Explain briefly about the Gas Chromatography.

14. (a) What do you mean by centrifugation? Give short note on its types.

Or

(b) Write short note on rate – zonal centrifugation.

15. (a) Give a short note on Histopathology

Or

(b) What is the diagnostic method for Angiogram?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the procedure for preparing solutions.

17. Describe in detail about Infra red spectroscopy.

18. Explain in detail HPLC, its application, separation and identification of various compounds.

19. What are the types of centrifuges?

20. Explain the diagnostic method of MRI and ultrasound.

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F–9078

Sub. Code
7BMC6C2

B.Sc. DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Microbiology and Clinical Lab Technology

CLINICAL PARASITOLOGY AND MYCOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Parasite
2. Giardiasis
3. Black fever
4. Balantidiasis
5. Fluke
6. Roundworm
7. Mycosis
8. Coenocytic
9. Mycotoxin
10. Hypersensitivity

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain about the host parasite relationship.

Or

(b) Write down the serological tests for parasitic infections.

12. (a) Give an account on the general characteristics? Life cycle and pathogenesis of Leishmania.

Or

(b) Write about the morphology, pathogenesis and control measures of the plasmodium sporoyoites.

13. (a) Explain the life cycle and pathogenesis of Taenia Sodium

Or

(b) Explain the life cycle, pathogenesis and clinical signs of Ascaris Lumbricoides.

14. (a) Describe in brief about the Superficial Mycosis.

Or

(b) Discuss about cutaneous mycosis.

15. (a) Give an account on Actinomycetes infections.

Or

(b) Write a note on mycotoxins.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write the general diagnostic procedure for parasitic infections.

17. Explain the morphology, life cycle and pathogenesis of amoebae.

18. Discuss about the epidemiology, pathogenesis and control measures of platyhelminthes.

19. Write a detail sketch on classification of fungi.

20. Elaborate on lab diagnosis and treatment of fungal infections.

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F–9079

Sub. Code
7BMC6C3

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Microbiology and Clinical Lab Technology

RECOMBINANT DNA TECHNOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Linkers.

2. Klenow enzymes.

3. Cosmid.

4. CoIEI plasmid.

5. Gun shot method.

6. Liposome fusion.

7. cDNA.

8. Chromosome jumping.

9. HGH

10. Vaccines.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a note on Taq DNA polymerase.

Or

(b) List out the applications of r-DNA.

12. (a) Explain about pBR322 vector.

Or

(b) A note on phagemid as vector.

13. (a) Write about Microinjection techniques.

Or

(b) Selection of recombinant bacteria by lacz complementation method.

14. (a) Steps involved in construction of genomic library.

Or

(b) Describe about site directed mutagenesis.

15. (a) Explain the production of Insulin.

Or

(b) Discuss about the production of interferons.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write about the history of rDNA technology.

17. Explain about the classification of plasmids.

18. Write in detail about the ultrasonication techniques.

19. Describe about the safety regulations in rDNA techniques.

20. Detailed sketch in GEMOs.

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F–9081

Sub. Code
7BMC3E2

B.Sc. DEGREE EXAMINATION, APRIL 2023

Sixth Semester

Microbiology and Clinical Lab Technology

Elective – ENVIRONMENTAL MICROBIOLOGY

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Droplet nuclei.
2. HEPA.
3. MPN.
4. Oligotrophic lakes.
5. Pyrolysis.
6. Anaerobic digester.
7. Bioming.
8. Xenobiotic.
9. Green house gases.
10. Acid rain

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write an account on the sources of microorganisms in air.

Or

(b) Explain about the various sampling techniques.

12. (a) Write a note on marine ecosystem.

Or

(b) Assessment of water quality – Explain.

13. (a) Discuss the process of vermiform composting.

Or

(b) Explain about saccarification.

14. (a) Write the degradation process of pesticides and surfactants.

Or

(b) Comment on Bioleaching.

15. (a) Discuss about global warming.

Or

(b) List out the biotechnological approaches for management.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write a note on impingement techniques.

17. List out the diseases caused by water borne pathogens.

18. Explain in detail about the primary, secondary and tertiary sewage treatments.

19. Give an account on biofouling.

20. Write an essay on global environmental problems.

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